

In re Patent Application of:  
**ZHANG ET AL.**  
Serial No. 09/517,648  
Filed: March 3, 2000

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**IN THE CLAIMS**

1. (currently amended) An optical component array comprising:  
an input transmission line ~~(14)~~ capable of carrying an optical input signal including a plurality of channels;

a first wavelength selective input filter ~~(16)~~ optically coupled to the input transmission line, the first wavelength selective input filter configured to optically couple a first segment of the optical input signal to a first optical component ~~(17)~~, and to optically couple a first remaining portion ~~(23)~~ of the optical input signal to

a second wavelength selective input filter ~~(30)~~, the second wavelength selective input filter configured to optically couple a second segment within the first remaining portion of the optical input signal to a second optical component ~~(31)~~ and to optically couple a second remaining portion ~~(171)~~ of the optical input signal to a bypass output port ~~(172)~~;

a bypass input port ~~(174)~~ optically coupled to a first wavelength selective output filter ~~(34)~~, the first wavelength selective output filter being configured to optically couple at least an optical signal ~~(173)~~ from the bypass input port to a second wavelength selective output filter ~~(20)~~, the second wavelength selective output filter being configured to optically couple at least a modified first segment ~~(212)~~ from the first optical component and the optical signal from the bypass input port to an output transmission line ~~(42)~~.

2. (previously presented) The optical component array of claim 1 wherein the bypass input port is optically coupled to the bypass output port with an optical transmission line.

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3. (previously presented) The optical component array of claim 2 wherein a bypass optical amplifier is disposed in an optical path coupling the bypass input port to the bypass output port.

4. (original) The optical component array of claim 1 wherein the first optical component is a first optical amplifier and the second optical component is a second optical amplifier, and at least one of the first optical amplifier and the second optical amplifier includes a center tap output port and a center tap input port.

5. (original) The optical component array of claim 4 further comprising a signal processing module disposed between, and optically coupled to, the center tap input port and the center tap output port.

6. (original) The optical component array of claim 4 further comprising a shunt transmission line disposed between and optically coupled to the center tap input port and the center tap output port.

7. (original) The optical component array of claim 4 wherein the first optical component is selected from the group consisting of an optical amplifier, a multiplexer, a de-multiplexer, a filter, a dispersion compensation module, a cross connection, an ADD/DROP module, an amplitude adjustment module, and a thru line.

8. - 12. (canceled)

13. (currently amended) An expandable optical component array comprising:

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an optical input transmission line ~~(14)~~ configured to optically couple a plurality of optical channels ~~( $\lambda_1$ ,  $\lambda_2$ ,  $\lambda_3$ , ...,  $\lambda_N$ )~~ to

an interleaf demultiplexer ~~(182)~~, the interleaf demultiplexer providing a first subset ~~( $\lambda_1$ ,  $\lambda_3$ ,  $\lambda_5$ , ...)~~ of the plurality of optical channels to a first interleaf demultiplexer output ~~(186)~~, the first interleaf demultiplexer output being optically coupled to a first optical component sub-array ~~(190)~~ at

a first wavelength selective input filter ~~(16)~~, the first wavelength selective input filter optically coupling a first portion ( $\lambda_1$ ) of the first subset of the plurality of optical channels to

a first optical component ~~(17)~~, the first optical component being optically coupled to

a first wavelength selective output filter ~~(20)~~, the first wavelength selective input filter optically coupling a second portion ~~(171)~~ of the first subset of the plurality of optical channels to

a bypass output port ~~(172)~~, and the first wavelength selective output filter being configured to optically couple an optical signal ~~(173)~~ from

a bypass input port ~~(174)~~ and optically coupling a modified first portion ~~( $\lambda_1'$ )~~ of the first subset of the plurality of optical channels to

a first interleaf multiplexer input ~~(187)~~, the first interleaf multiplexer input being optically coupled to an optical output transmission line ~~(42)~~.

14. (currently amended) The expandable optical component array of claim 13 further comprising:

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a second interleaf demultiplexer output ~~(188)~~ optically coupled to at least a second bypass output port ~~(172B)~~ and the interleaf demultiplexer; and

a second interleaf multiplexer input ~~(189)~~ optically coupled to at least a second bypass input port ~~(174B)~~ and an interleaf multiplexer ~~(184)~~.

15. (original) The expandable optical component array of claim 13 wherein the first optical component includes center tap ports.

16. (previously presented) The optical component array of claim 1 wherein the bypass output port is an open bypass output port and the bypass input port is an open bypass input port.